

irisys VectorTM 4D

APPLICATION: Tailgating and Access Control

Using the Vector 4D as a tailgate detector provides a significant increase in access security by detecting tailgating events where an un-authorized person follows a valid card/badge holder through a controlled door into a building or area.

In the present COVID-19 crisis it is particularly important to keep a tight control on the number of people in your premises (the 'occupancy') in order to maintain social distancing requirements and ensure a healthy working environment for your employees.

People entering premises by avoiding access control systems (tailgaters) may be doing so maliciously or innocently, for example, by being let in by somebody else. In either case they will not register as occupying the building if they have bypassed the access control system, and will therefore violate COVID-19 occupancy limits.



BENEFITS:

- Enforce Covid-19 occupancy requirements
- Detects un-authorized entry
- Increases door security
- Enforces use of card, token, badge or biometric access control systems.
- Improves roll-call and occupancy measurement accuracy
- High detection rate, low false-alarm rate
- Discreet ceiling mounted design
- Operates irrespective of lighting level

FEATURES:

- Simple interface
- Retro-fit to existing systems
- Alarm output
- User configurable detection lines
- Unique passive staff-detection option
- Simple installation – downwards looking
- Built-in video camera for set-up and configuration
- Local or remote configuration via standard IP connection

APPLICATIONS:

- Offices
- Healthcare
- Government, civil, defence
- Transport hubs
- Manufacturing
- Pharmaceutical



HOW IT WORKS

The tailgate detection functionality of the Vector 4D (IRC6637) works in conjunction with an access control system to detect a person following a cardholder through a controlled door.

The Vector 4D is a people counting sensor made by Irisys that uses industry-leading technology based on Time-of-Flight (ToF) detection. Invisible infra-red pulses track, detect and count people to 99.5% accuracy.

The tailgate detection function works by using the signal from the access control system indicating the number of valid cardholders entering and comparing that count with the actual number of people entering. A difference in these counts indicates a tailgating event and generates an alarm signal.

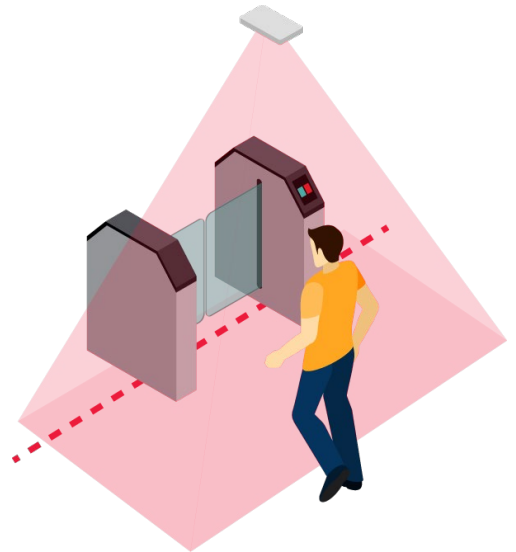
The tailgate alarm may be used to trigger a response appropriate to the application:

- Sound a local buzzer or alarm at the door to allow local staff to challenge the person tailgating.
- Record the tailgate alarm to allow daily/weekly event logs to be generated.
- Trigger live CCTV images to be displayed or recorded.
- Automatically lock a second subsequent door/gate.

The tailgate detection function of Vector 4D operates with most access control systems requiring only a simple relay interface. The installation engineer configures the unit using a simple built-in configuration interface allowing them to configure the tailgate detection functionality.

Unique features include a passive mechanism for staff detection so identified staff (security staff, etc.) can be excluded from the detection. Staff detection requires identified staff members to wear a special Irisys lanyard around their neck – the Vector 4D sensor detects the retro-reflective material of the Irisys lanyard, using the reflected signal to identify a staff member (no Bluetooth or radio signal is required, this is a passive detection technique).

The unit includes a video camera that may be used for remote set-up and configuration and to keep track of the health of the device (IP connection required).



TAILGATE DETECTION MODE

Standard Tailgate Detection Mode

In Tailgate mode the Vector 4D sensor is ceiling mounted on the secure side of the door.

A virtual counting line is positioned to detect people entering. A relay output from the access control system provides a pulse for each valid card presented.

If more people are counted over the count line than valid cards are presented the tailgate alarm relay output is triggered. People exiting in the opposite direction are ignored.

SECURITY MODES

Wrong-Way Detection Mode

In Wrong-Way detection mode the Vector 4D sensor is ceiling mounted on the secure side of the door. The virtual counting lines are positioned within the detection zone.

The sensor will provide an output pulse when a person passes through the zone in the 'wrong' direction (exiting through an entrance, for example).

'Person in zone' Detection Mode

In 'Person in Zone' mode the Vector 4D sensor is ceiling mounted over the area of interest.

A zone is defined and an alarm will be raised when a person enters the zone, or if more than one person is seen in the zone.




SYSTEM COMPONENTS:


	Part Number	Description
Vector 4D Analytic People Counter (PoE)	IRC6637-AW	People counting and tailgate detecting sensor. Requires connection to PoE switch for power.
Vector 4D I/O module	IWC6203	Provides signal inputs and outputs.
Employee Detection Lanyards (pack of 50)	IWC6204-50	Optional accessory. Enables wearer to be excluded from detection.

TECHNICAL SPECIFICATIONS:

Mounting Height Range	2.0m to 4.5m
Mounting	Removable mounting plate for ceiling attachment with screw holes
Detection Speed	5 m/s (max)
I/O Module	Connects to the Vector 4D via a (supplied) USB to micro-USB cable.
Interface Requirements (via IO Module)	<ul style="list-style-type: none">Valid card input voltage must be in range of 0v to 28v. A high level must be over 3.3v and a low level below 1.0v. Default input state is low, pulled down via a 1M ohm resistor.Tailgate event alarm output is referenced to ground and of 'open drain' type. Voltage applied must be in range 0v to 28v. Output will sink 300mA max. Can be configured as normally high or normally low with pulse width of between 1ms and 1000ms.IO module includes optional pull-up / pull down resistors configured by tristate DIP switches as required. Options: 10k pull-up to +5V; 10k pull-down to 0V; no pull-up or pull-down (default).
Configuration	Local or remote IP connection to in-built browsable configuration tool
Power Supply	PoE powered. Requires connection to a PoE switch. (PoE IEEE802.3af Class 3 <12.95W)
Limitations to Use	Vector devices should only be specified for low to medium level security applications; for the detection of opportunist or unintentional security circumvention. They are not designed to detect coordinated attempts to bypass an access control system.
Housing Material	Die-cast aluminium alloy
Dimensions (H x W x D)	195mm x 110mm x 32mm
Weight	650g
Environment	The detector is designed for use in indoor environments
Operating and Storage Temperature:	0°C to 40°C (storage -10°C to 50°C)



 +44 (0)1604 594200
 sales@irisys.co.uk
 www.irisys.net

 **InfraRed Integrated Systems Ltd**
Park Circle, Tithe Barn Way, Swan Valley
Northampton NN4 9BG
United Kingdom

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